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NASA-16529 (MARCH 2003)
NASA
SUPERSEDING NASA-16529
(SEPTEMBER 1999)

NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

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SECTION 16529

PHOTO CONTROL DEVICES
03/03

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NOTE: Delete, revise, or add to the text in this section to cover project requirements. Notes are for designer information and will not appear in the final project specification.

This section covers photoconductive-lighting control devices for use with outdoor lighting systems.

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PART 1 GENERAL

1.1 REFERENCES

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NOTE: The following references should not be manually edited except to add new references. References not used in the text will automatically be deleted from this section of the project specification.

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The publications listed below form a part of this section to the extent referenced:

ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA)

IES LM-48	(1984) Guide for Calibration of Photoelectric Control Devices

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C136.10	(1996) Roadway Lighting Equipment-Locking-Type Photocontrol Devices and Mating Receptacles - Physical and Electrical Interchangeability and Testing

UNDERWRITERS LABORATORIES (UL)

UL 773	(1997; 3rd Ed) UL Standard for Safety

Plug-In, Locking Type Photocontrols for
Use With Area Lighting

1.2 GENERAL REQUIREMENTS

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NOTE: If Section 16003, "General Electrical Provisions," is not included in the project specification, applicable requirements therefrom should be inserted and the following paragraph deleted.
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Section 16003, "General Electrical Provisions," applies to work specified in this section.

Installation Drawings shall be submitted for light-sensitive control devices in accordance with the manufacturer's recommended instructions for installation.

1.3 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01330, "Submittal Procedures," and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control. Include a columnar list of appropriate products and tests beneath each submittal description.
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The following shall be submitted in accordance with Section 01330, "Submittal Procedures," in sufficient detail to show full compliance with the specification:

SD-03 Product Data

Manufacturer's catalog data shall be submitted for Photoconductive Control Devices.

Installation Drawings shall be submitted for Light-Sensitive Control Devices in accordance with paragraph entitled, "General Requirements," of this section.

SD-06 Test Reports

Test reports shall be submitted for System Operation Tests in the presence of the Contracting Officer.

SD-08 Manufacturer's Instructions

Operational instructions shall be submitted for Light-Sensitive

Control Devices consisting of the manufacturer's recommended procedures for operation.

PART 2 PRODUCTS

2.1 PHOTOCONDUCTIVE CONTROL DEVICES

Photoelectric control devices shall be in accordance with [IEEE C136.10 and] UL 773.

Photoconductive control devices for natural daylight and darkness control of incandescent, fluorescent, and mercury-vapor outdoor lighting luminaires shall include a photoconductive cell, thermal actuator, snap-action switch in a weatherproof housing.

Switch mechanism shall consist of a heavy-duty general-purpose precision snap-acting switch. Switch shall be single-pole, single-throw, with a minimum rating of 1,000-watts incandescent-lamp load and 1,200-volt-amperes reactive for vapor-lamp load at rated voltage and frequency.

Time delay in excess of 5 seconds shall be an available option.

Housing for light-sensitive control devices shall be molded from translucent butyrate or acrylic plastic materials and shall be fastened to the base with screws.

Control device, when attached to its mounting, shall be weatherproof and constructed to exclude beating rain, snow, dust, and insects and shall be capable of withstanding 96 percent relative humidity at 122 degrees F 50 degrees C for 48 hours under operating conditions.

Light-sensitive control devices shall be physically and electrically interchangeable with three-pole, 3-wire locking plug and receptacle connections to the line, load, and neutral conductors of the lighting circuit.

Device shall turn on within the limits of plus 100 to minus 50 percent of its setting, over a range of input voltage from 105 to 130 volts at rated frequency and ambient temperature, and at rated voltage and frequency over a range of temperature from minus 85 to 122 degrees F 29 to 50 degrees C, with relative humidities up to 96-percent throughout the temperature range.

Device shall be adjusted to operate within the limits of 0.8 to 1.2 foot-candles 9 to 13 lux, but shall be capable of calibration of the turn-on light level over a minimum range from 0.5 to 3.0 foot-candles 5 to 32 lux, and shall be adaptable for calibration up to 10 foot-candles. 108 lux. Ratio of turn-off light level to turn-on light level shall not exceed 5.

Instrument accuracy shall be maintained by proper calibration in accordance with IES LM-48.

Devices shall be rated at 120 or 277 volts, 60 hertz. Rated ambient temperature shall be 25 plus or minus 5 degrees C.

PART 3 EXECUTION

3.1 INSTALLATION

Photoconductive control devices shall be installed in accordance with the manufacturer's installation instructions.

3.2 FIELD TESTING

Photoconductive control devices shall be demonstrated to operate satisfactorily in the presence of the Contracting Officer.

System Operation Tests shall be performed in accordance with referenced standards in this section.

-- End of Section --